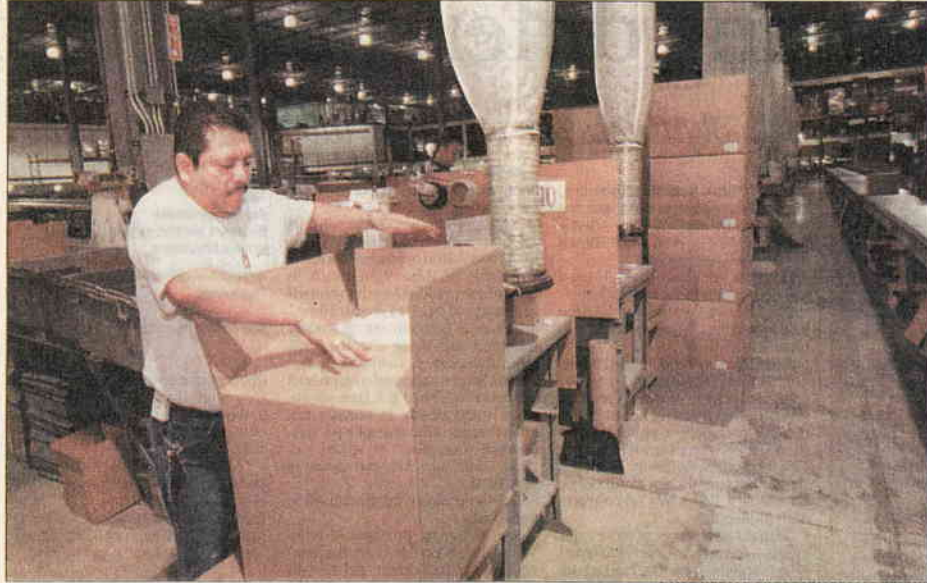


Daily Herald

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Gregorio Rodriguez packs merchandise wearing a T-shirt at the extra-insulated Roman Inc. warehouse in Addison. Even with nearly no central heating or air-conditioning systems in the building, the temperature remains a comfortable 69.3 degrees year round.

DAILY HERALD PHOTOS/MARCELLE BRIGHT

Warmth with no furnace

Kaneland school officials checking out buildings that stay comfortable all year



Several sensors throughout the Roman Inc. warehouse, constructed by Solarcrete in Huntley, record exterior and interior temperatures throughout the day. The computer monitor reveals 40-degree temperatures with 5 mph winds outside, while it remains 67 to 70 degrees inside.

By KATHRYN GRONDIN
Daily Herald Staff Writer

Kaneland school administrators are pondering a future with tiny utility bills.

The district is investigating energy-efficient construction options, one of which might include operating without heating or air-conditioning systems.

Solarcrete in Huntley constructs extra-insulated buildings that can maintain roughly 70-degree temperatures year-round with small—if any—heating or air-conditioning units.

"We're using the exact same materials as

everyone else; we're just using them a little differently," said Anthony Jedlinski, vice president of Roman Inc., whose Addison building was built by Solarcrete. "We insulate ourselves from the environment around us."

How it works

The building style capitalizes on the earth's thermal energy, which keeps the ground below the frost line at a constant 53 degrees.

Solarcrete captures that heat by installing its walls about 3 feet deeper into the ground

than typical buildings. The company traps the heat emanating through the ground floor with cement walls that have more than three times the insulation of most buildings. Rather than the standard 2½ inches of insulation, Solarcrete uses 7½ inches of Styrofoam.

Energy efficient windows and limited openings in the roof also minimize heat loss.

"The building acts like a cave year-round," said Peter Konopka, general contractor and developer for Solarcrete.

Kaneland administrators recently toured

See ENERGY on PAGE 6

"We Build the most Energy Efficient Buildings in the World"



SOLARCRETE E.E.B.S.
P.O. Box 669
Huntley, IL 60142
815-923-2553

F8

Energy: Cost savings, practical use are balanced

Continued from Page 1

Roman Inc., which creates and distributes Christmas decorations and other collectibles.

They found temperatures ranged from 55 degrees on a window to 67 and 69 degrees on walls and ceiling beams, said Tom Runty, assistant superintendent for business. The outside temperature was in the 20s or 30s, he said.

"It most certainly is intriguing," Runty said. "It's something you can't believe if you don't see it."

School board members plan to visit a Solarcrete building to see for themselves.

"Any time you can save the kind of money that energy costs is something worth looking at," board President Steven Bauserman said. "Our energy costs are going to go nowhere but up in the future."

In light of high natural gas prices, Kaneland this winter dialed down all its thermostats a couple of degrees to 68, suggesting students bundle up if need be.

"It's appealing to think of a building you wouldn't have to pay to heat or cool," board member Robert Dray said. "But we have to be careful to do the homework to make sure it works."

"We wouldn't want to find out it had to be retrofitted for heat or air."

Not a new technology

Solarcrete, which has been in business for more than 25 years, has constructed about 3,000 buildings in this style across the country. But it has yet to build a school.

Most projects have been warehouses and distribution centers, but the company also has built some offices and homes.

Their buildings include townhouses in Creekside at St. Johns and Greenwood Place in Woodstock, Franklinshire near Dempster in Des Plaines; and industrial buildings for Roman, Dean Foods in Huntley and PK Product in Elgin.

"I don't know why it hasn't caught on," said Jim Rigney, vice president of Morken & Associates brokerage, a development and management company in West Chicago. "It's just a super-insulated building. In my mind if there is a reason why it hasn't caught on, it is that it hasn't had the promotional dollars behind it to educate the public."

"The real issue from our perspective — not knowing the technical end — is cost benefit. Do you spend \$50,000 more on a building to save \$500 a month on energy bills that you won't recoup for 10 years?"

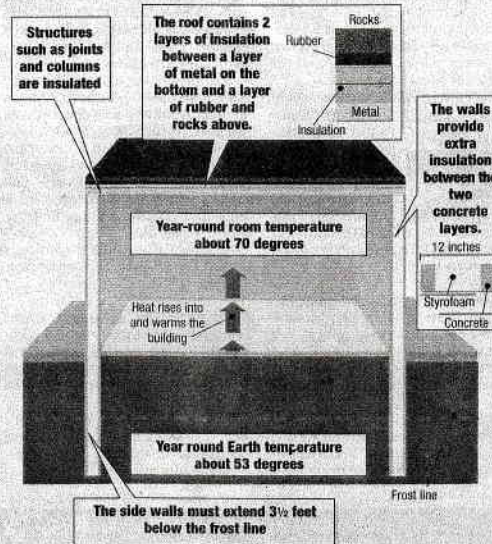
But Ike Bitton, Solarcrete's director of corporate development, says the building costs are comparable. Instead of paying for heating and air conditioning systems, you pay for the thicker insulation and deeper walls, he said.

"For the same money, you save all that on heat," Bitton said. Owners also save on maintenance costs and replacement parts.

Jedlinski said the Solarcrete bid for

The cave effect

Solarcrete buildings work like a cave in that walls placed deeper in the ground trap the thermal heat of Earth and extra-thick insulation in walls and roof keeps the inside temperature constant despite the weather outside.



Other important points

- 1. Incorporates fresh air ventilation:** To help keep fresh air inside, a ventilation system uses the inside air to heat or cool the air brought in from the outside. The outgoing air flows out and helps to neutralize the temperature of the incoming air.
- 2. Space heaters and air conditioners sometimes needed:** In some cases, small air conditioners or space heaters are needed. For example a small air conditioner might be needed if a large number of people work in one of these buildings.
- 3. Insulation rating is higher:** A typical home is insulated and rated R19. A building that uses this enhanced insulation technique has an insulation rating of R35.
- 4. Using energy-efficient doors and windows:** In order to work properly, the most energy-efficient doors and windows must be used. Air-locked doors should be used when possible. The temperature near windows and doors might be cooler than the rest of the building when it's colder outside.
- 5. Other factors to consider:** Other factors that influence building temperature include body and light temperatures.

Source: Solarcrete

DAILY HERALD GRAPHIC/JASON MCGREGOR

his Addison building was the middle price out of three construction proposals. The 550,000-square-foot warehouse cost \$25 per square foot. Air exchangers, which use the outgoing air to neutralize the incoming air's temperature, provide fresh air.

Jedlinski said he is confident he will recoup the construction costs because his first building constructed in Roselle in 1986 already has paid for itself through savings on energy bills.

"Even I had trouble believing it in the beginning, but I figured if it was only half true, I'd still save millions of dollars," Jedlinski said. "It did better than I was promised."

Real cost savings

Jedlinski was paying \$30,000 to \$40,000 per month to heat a typical masonry structure that was an eighth the size of his Addison building. Now he's paying \$10,000 a year in energy bills, he said.

Construction costs can range from \$75 to \$100 per square foot, depending on the amenities inside, Konopka said. A 15,000-square-foot Solarcrete mansion in Ohio came in at \$1.5 million, while an 8,000-square-foot house in Harvard cost \$750,000 because it had a whirlpool and other up-

grades, he said. Some of the company's townhouses sell for \$89,900.

What about air quality? Solarcrete is monitoring sick days in at least one of its buildings in an effort to show potential customers that's not a problem. "It's the stubbornness of the building industry — not to think outside the box," Jedlinski said of Solarcrete's lack of widespread popularity. "There is no doubt this is working."

Other suburban school districts are intrigued by the idea. Winfield Elementary District 34 has stepped up its investigation of energy-efficient options after seeing this winter's natural gas bills.

"Energy efficiency will be very important," Superintendent Jack Barshinger said. "We're in the planning phases right now."

Solarcrete might not be the solution, however, since it would require digging deeper into the ground and Winfield's school sites are in a flood plain, Barshinger said.

Mia Jazo-Harris, spokeswoman for the state's capital development board, said the group would consider projects using Solarcrete.

"It might have value if you're looking at it for energy efficiency," she said. "We'd have to look at all the options."